

FIG. 1A

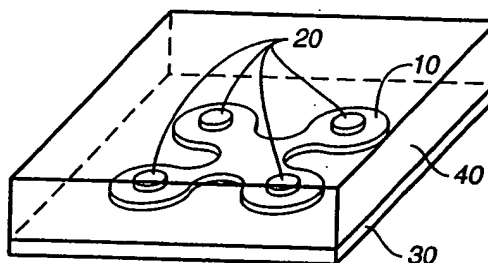


FIG. 1B

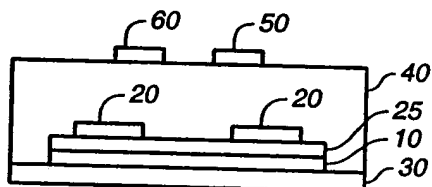


FIG. 1C

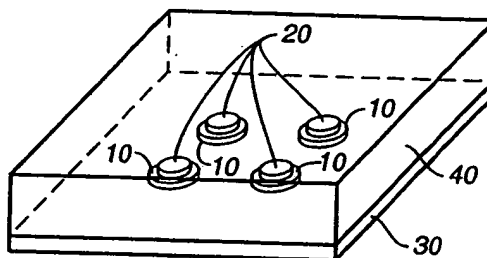


FIG. 1D

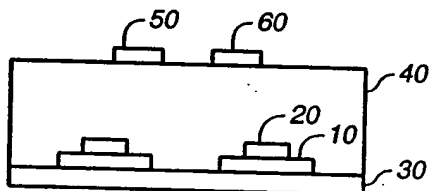


FIG. 1E

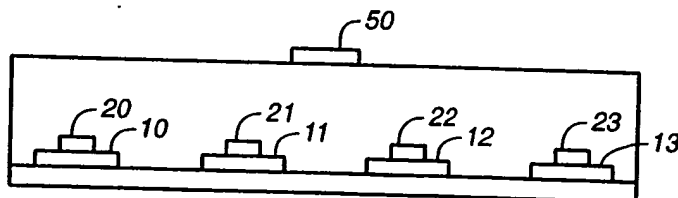


FIG. 1F

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2 / 22

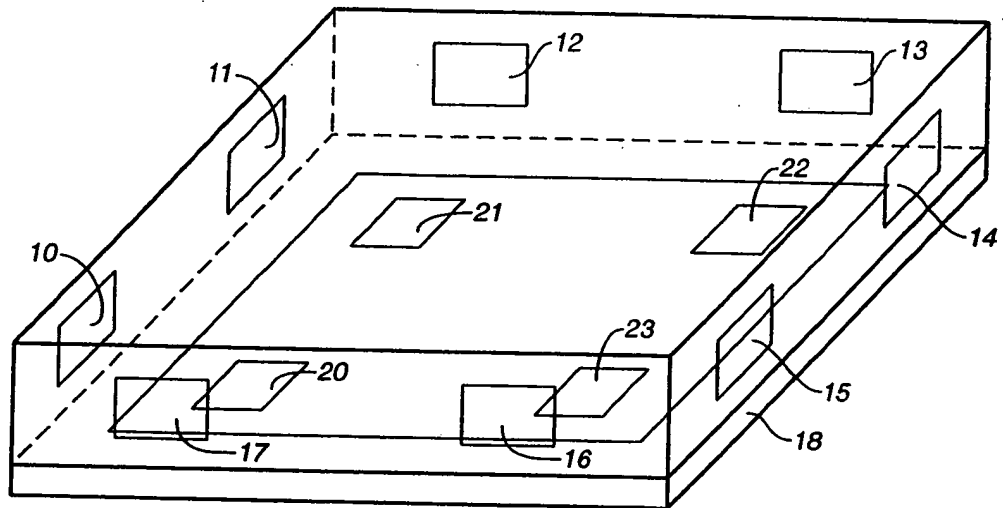


FIG. 2

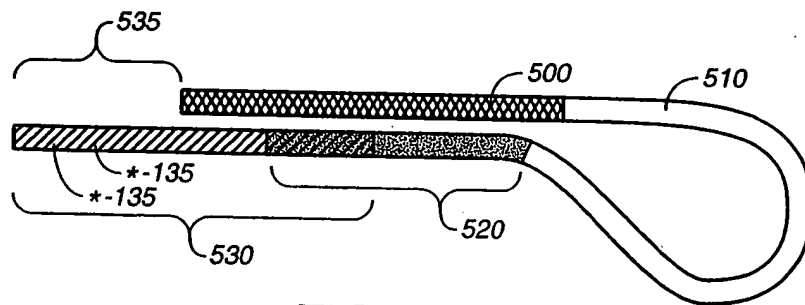


FIG. 12

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3 / 22

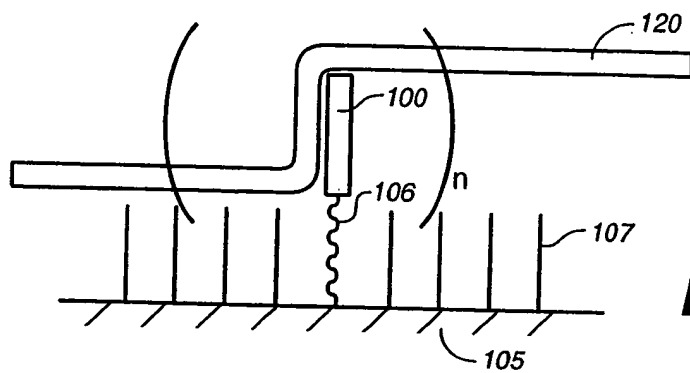


FIG. 3A

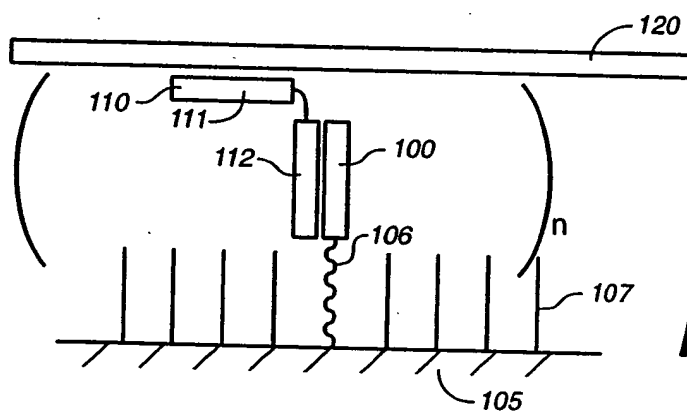


FIG. 3B

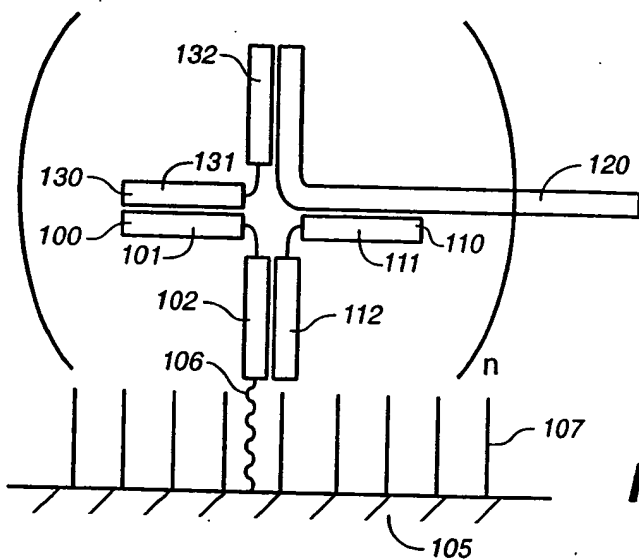


FIG. 3C



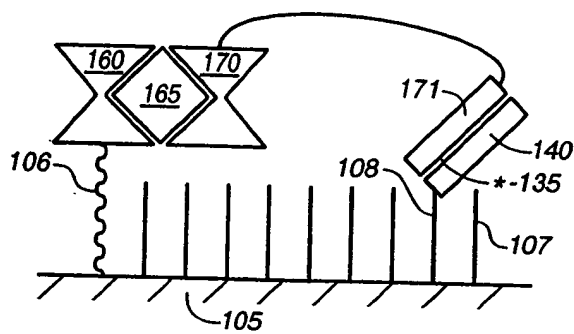


FIG. 4D

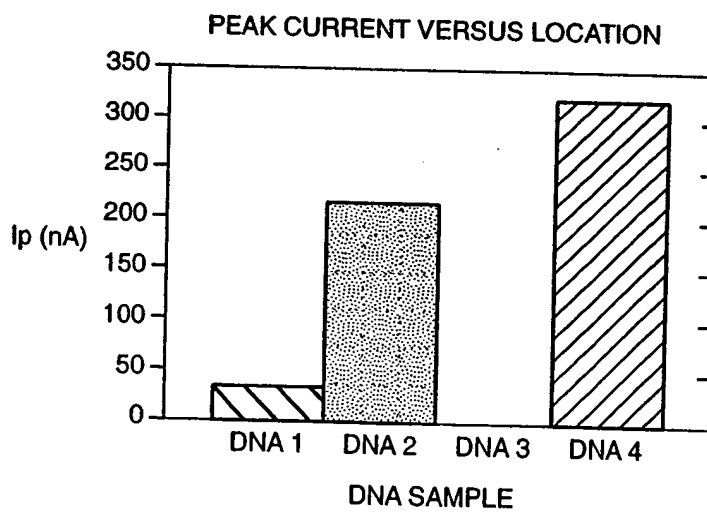


FIG. 14

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6 / 22

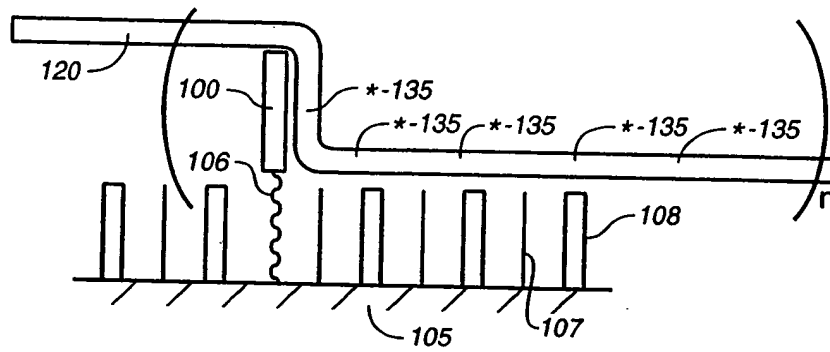


FIG. 5A

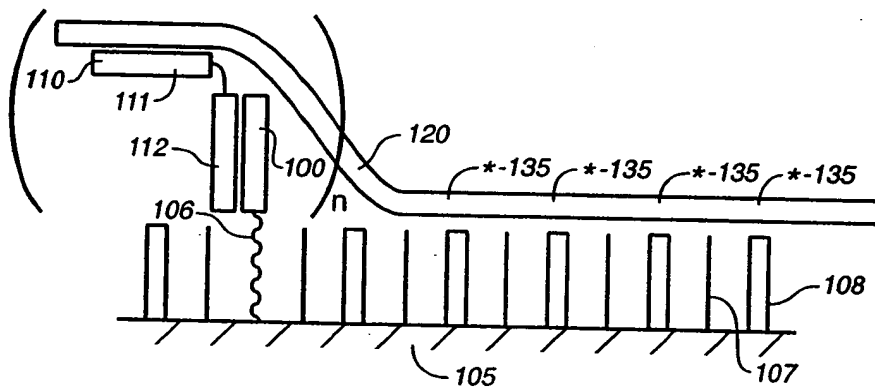


FIG. 5B

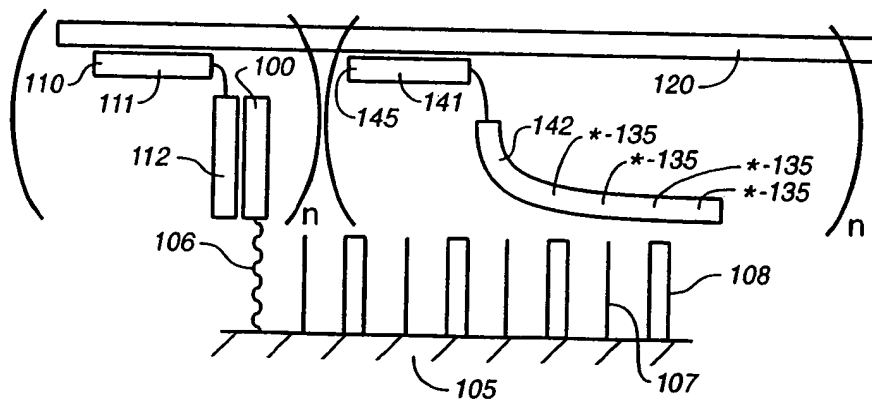
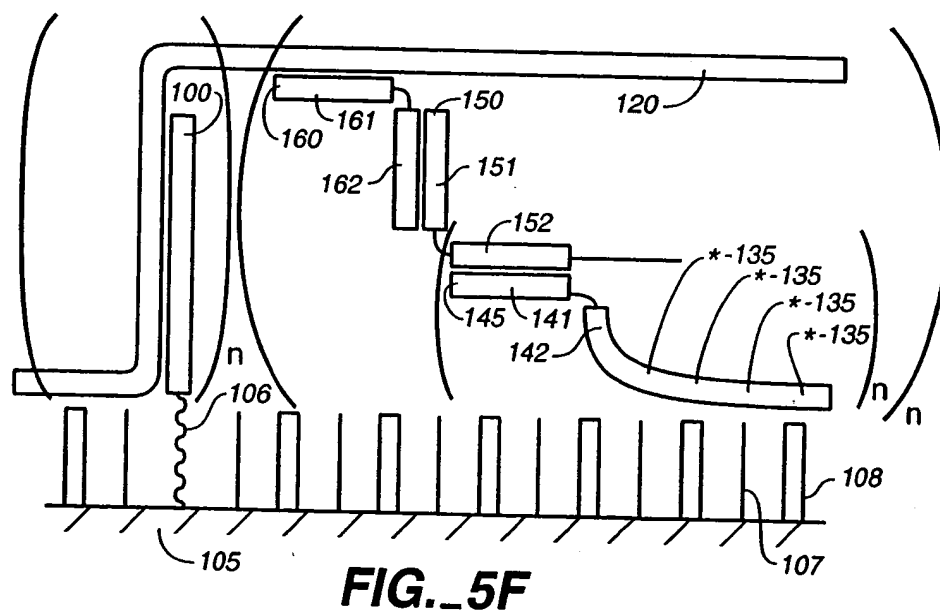
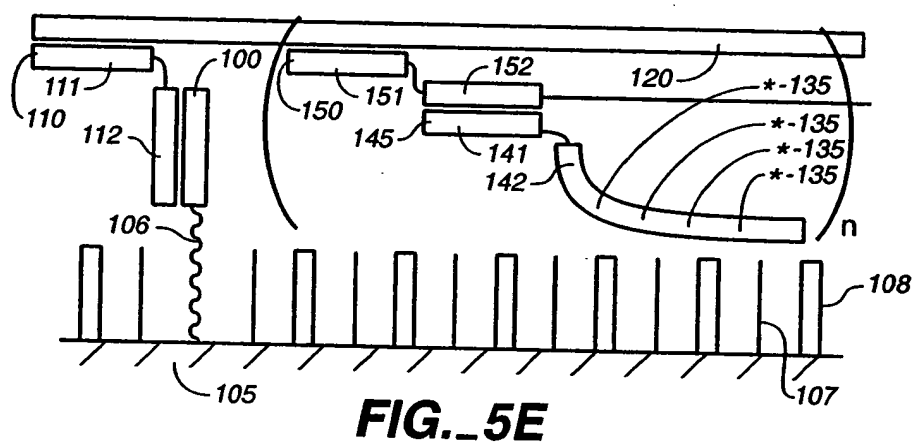
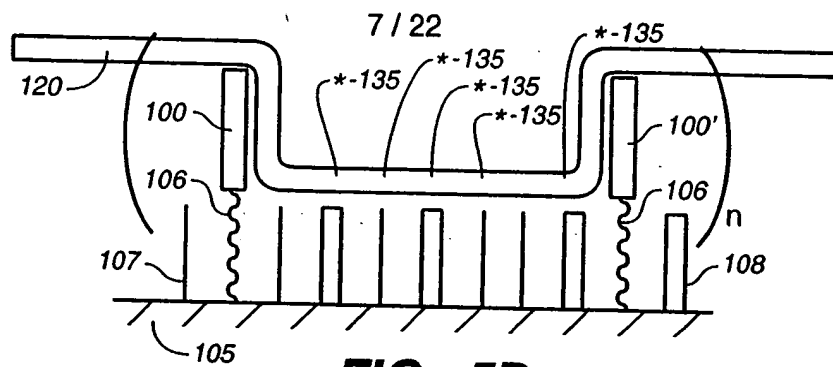


FIG. 5C



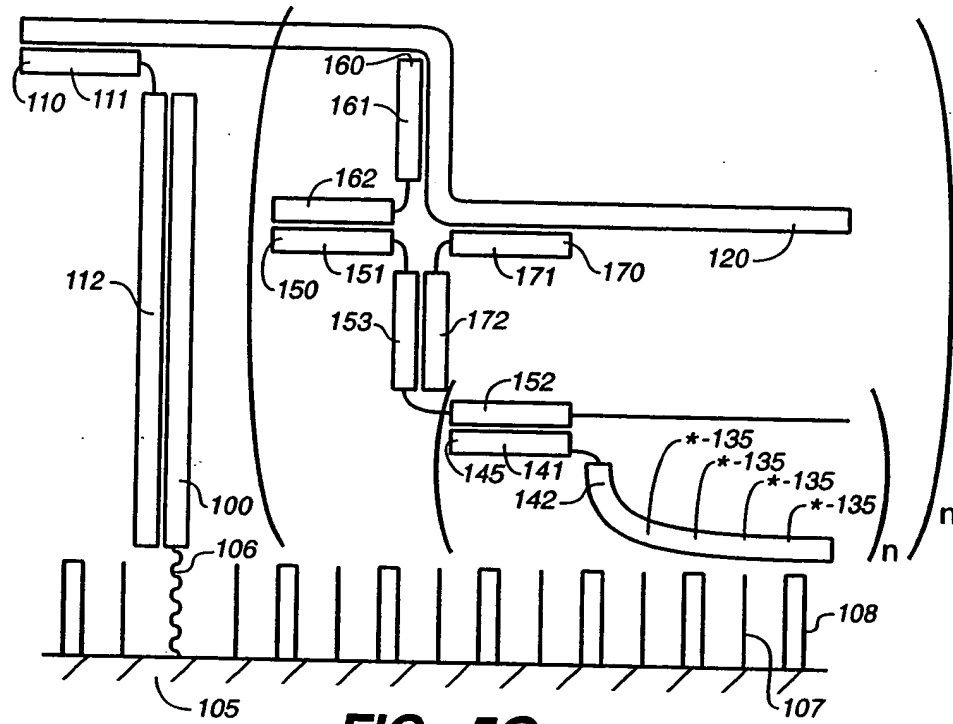


FIG. 5G

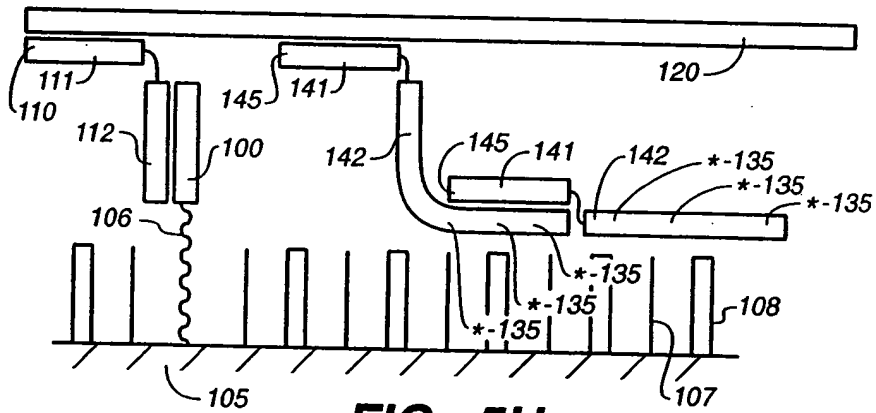


FIG. 5H

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9 / 22

FIG._6A

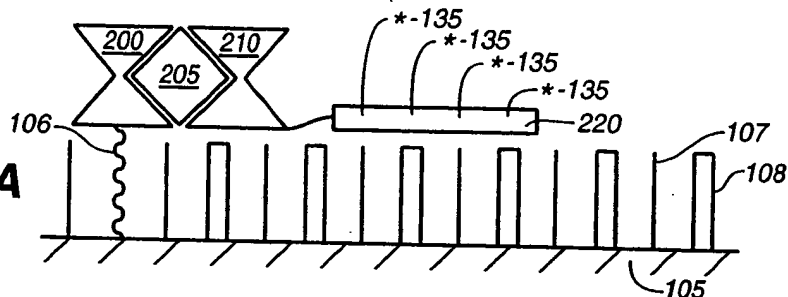


FIG._6B

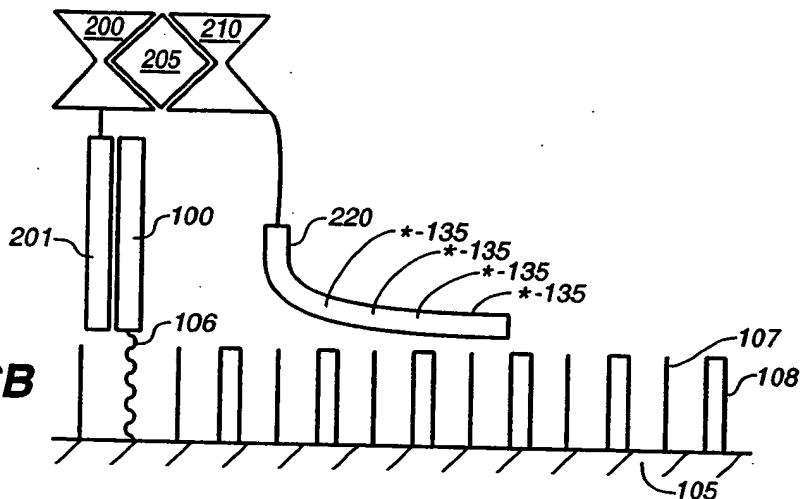


FIG._6C

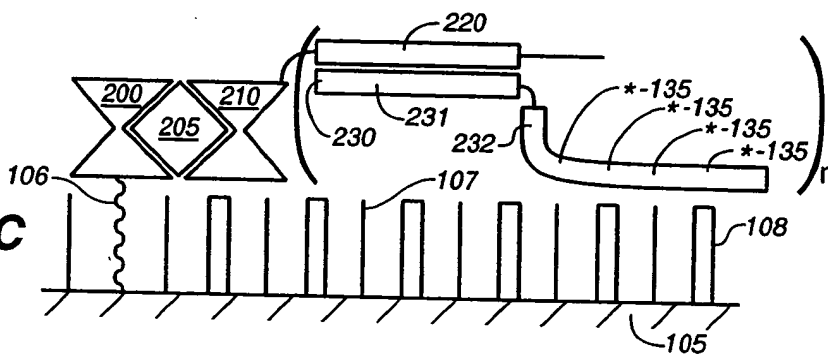
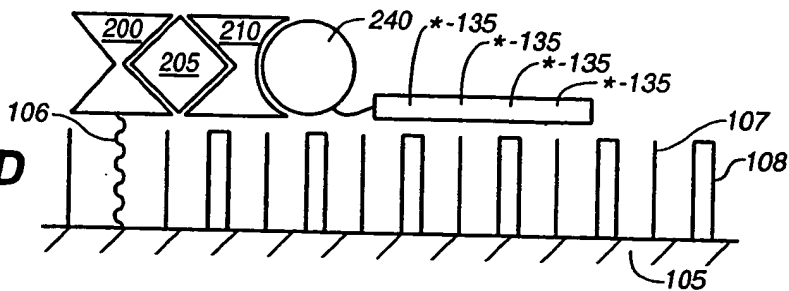


FIG._6D



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10 / 22

FIG._6E

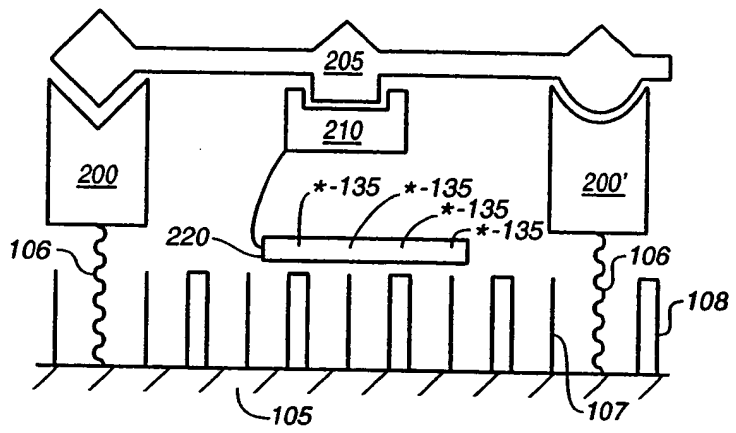
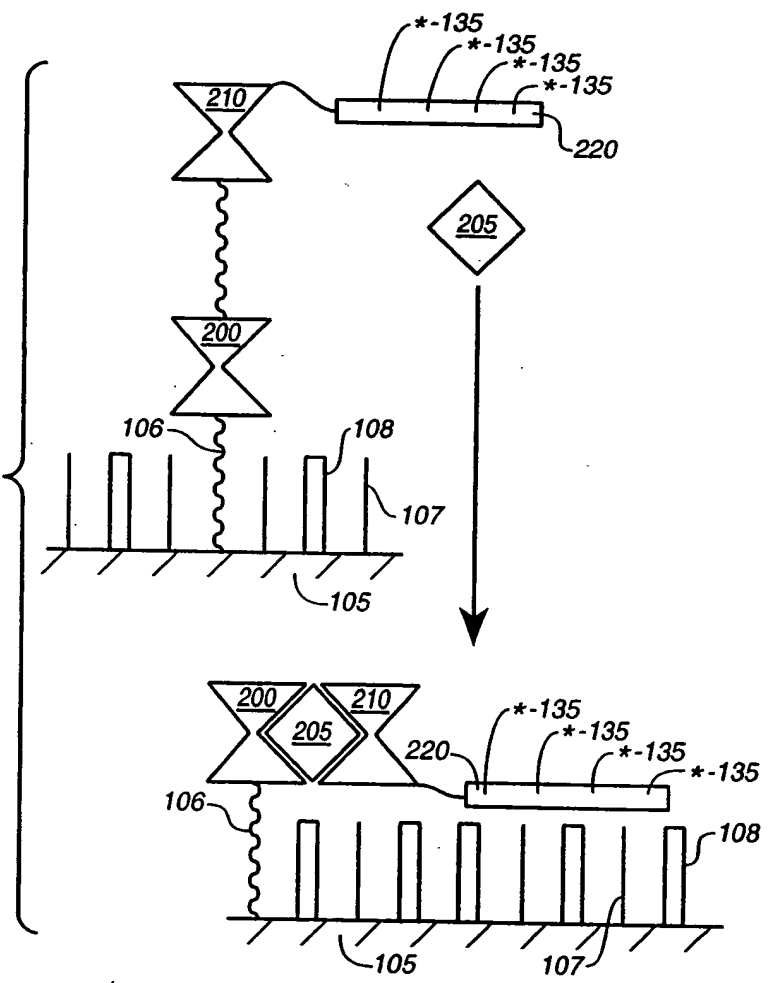


FIG._6F



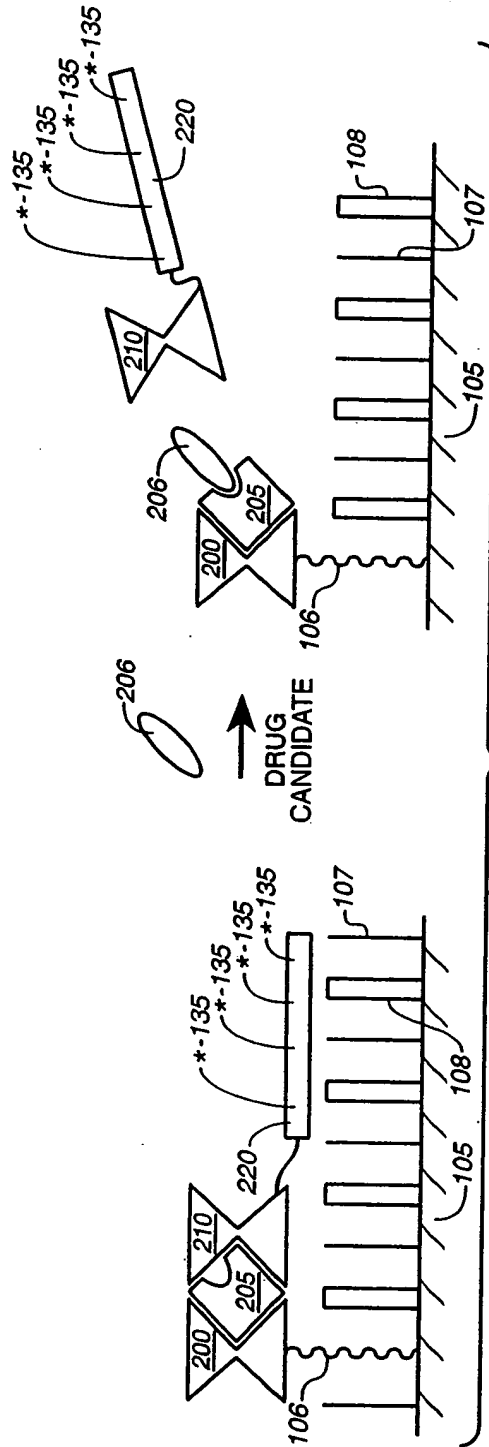


FIG. 6G

FIG. 6H

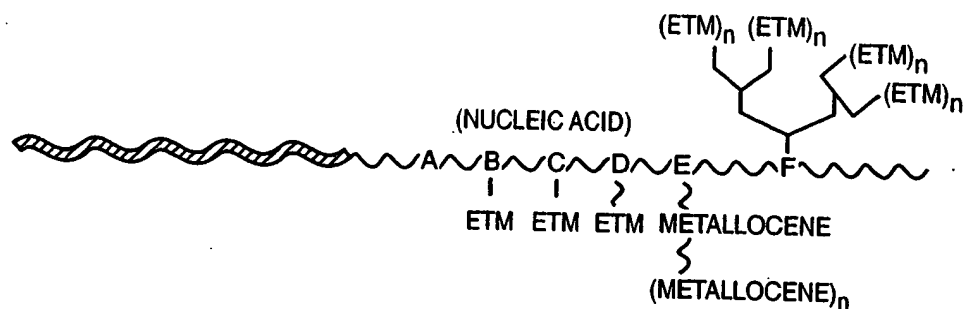
105, 106, 107, 108, 220, 230, 235

ENZYME

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13 / 22

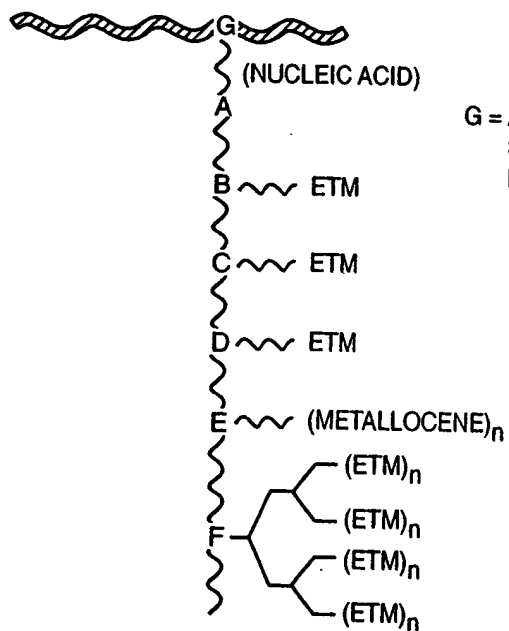
 = FIRST HYBRIDIZABLE PORTION OF LABEL PROBE
 = RECRUITMENT LINKER



A = NUCLEOSIDE REPLACEMENT
 B = ATTACHMENT TO A BASE
 C = ATTACHMENT TO A RIBOSE
 D = ATTACHMENT TO A PHOSPHATE

E = METALLOCENE POLYMER, ATTACHED
 TO A RIBOSE, PHOSPHATE, OR BASE
 F = DENDRIMER STRUCTURE, ATTACHED
 VIA A RIBOSE, PHOSPHATE OR BASE

FIG. 7A



G = ATTACHMENT VIA A "BRANCHING
 STRUCTURE", THROUGH RIBOSE,
 PHOSPHATE OR BASE

FIG. 7B

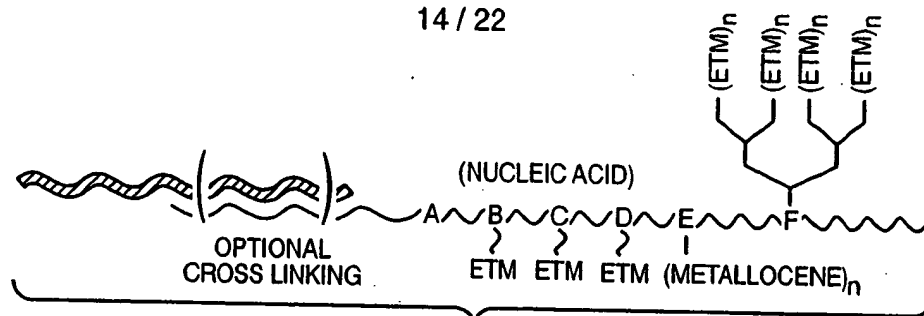
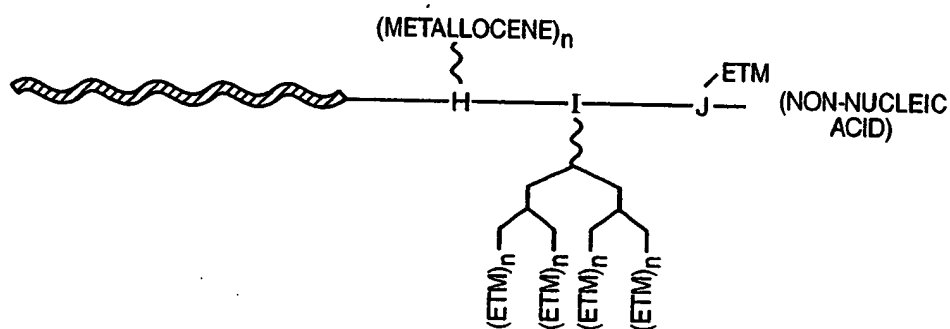


FIG._7C



H = ATTACHMENT OF METALLOCENE POLYMERS
 I = ATTACHMENT VIA DENDRIMER STRUCTURE
 J = ATTACHMENT USING STANDARD LINKERS

FIG._7D

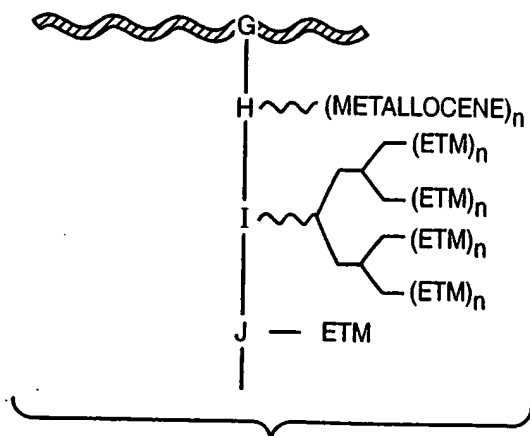


FIG._7E

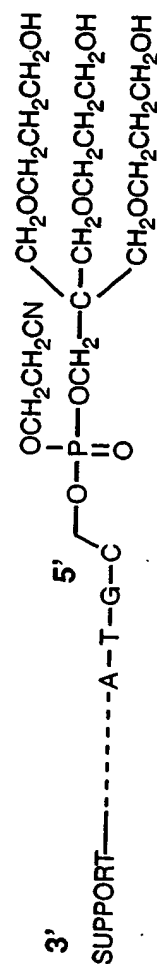
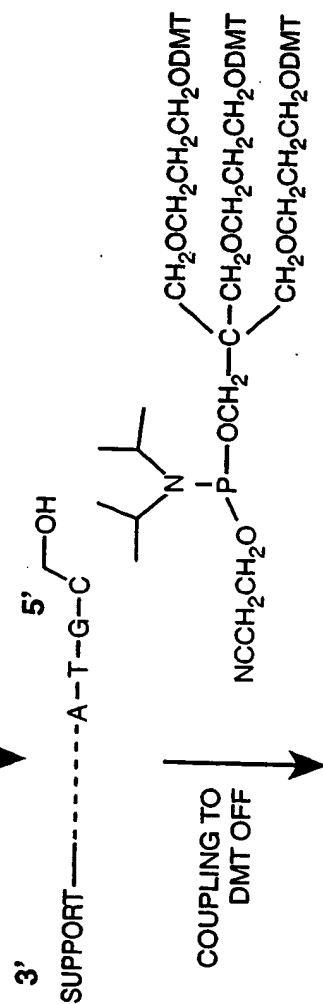
FIG. 8A

FIG. 8A

FIG. 8B

FIG. 8A

STANDARD DNA SYNTHESIS



THIS COUPLING PROCESS CAN BE REPEATED UNTIL DESIRED # OF THE BRANCHING POINTS



FIG. 8B

FIG. 9

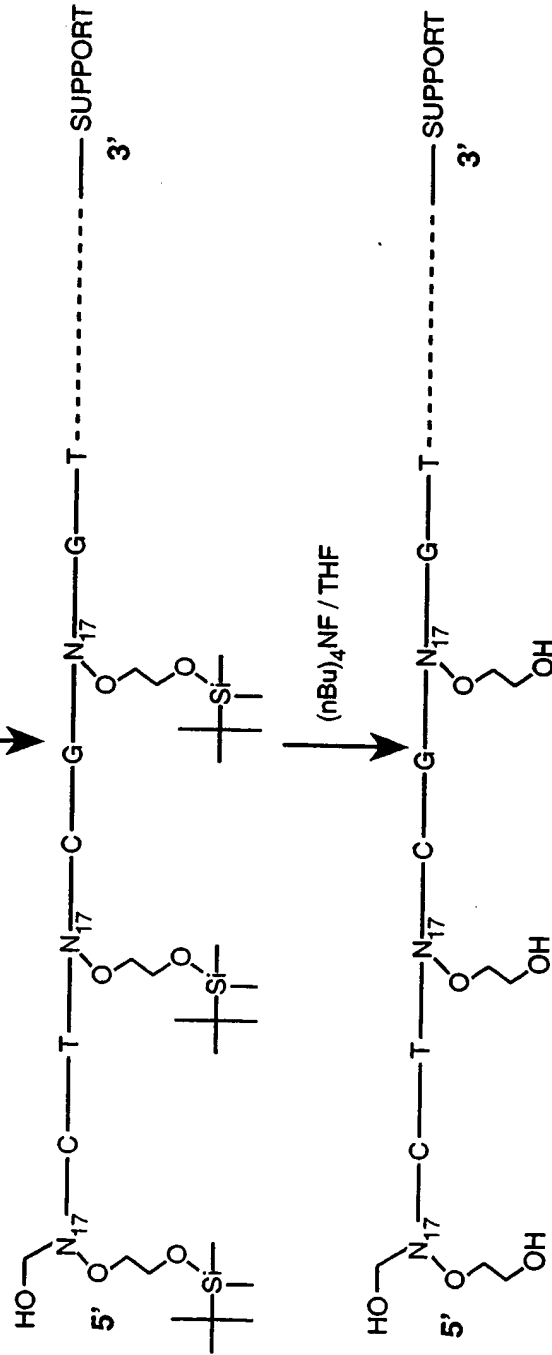
FIG. 9A

FIG.-9B

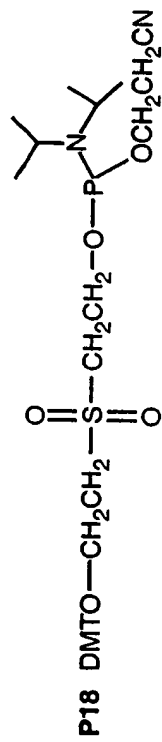
FIG.-9C

FIG. 9A

STANDARD DNA SYNTHESIS USING N17







DMT OFF / CLEAVAGE AND DEPROTECTION

THIS PROCESS CAN BE REPEATED UNTIL THE DESIRED # OF FERROCENE IS OBTAINED, AND THEN HYDROXY GROUPS ON FERROCENE ARE CAPPED USING THE LEFT PHOSPHAMIDITE IN ORDER TO INCREASE THE SOLUBILITY OF FERROCENE IN WATER.

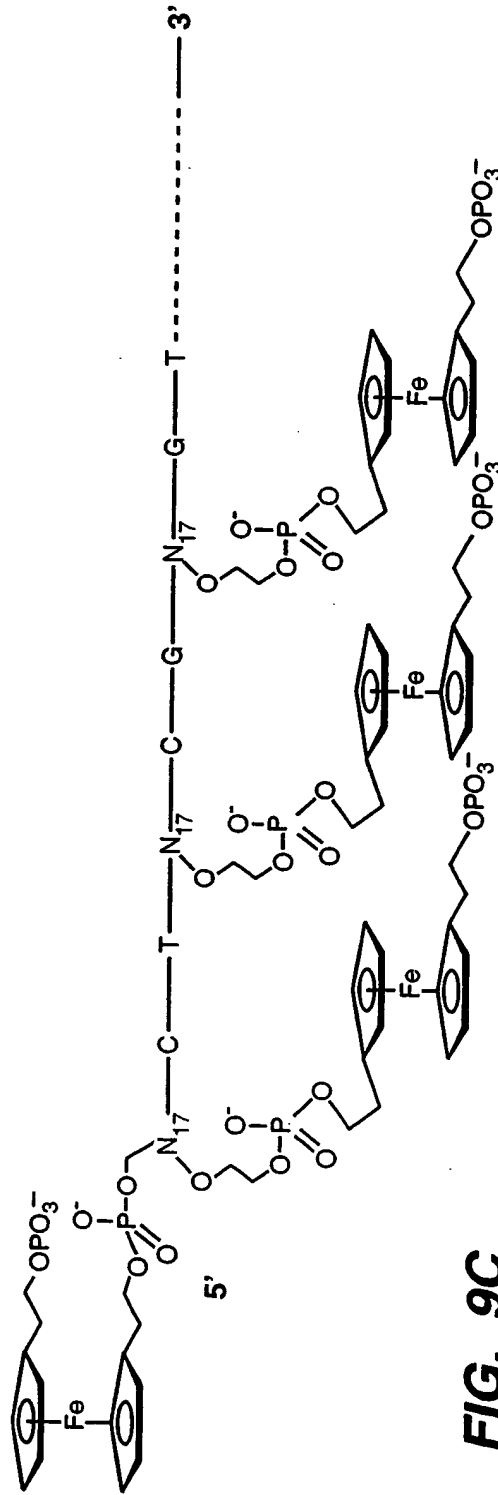
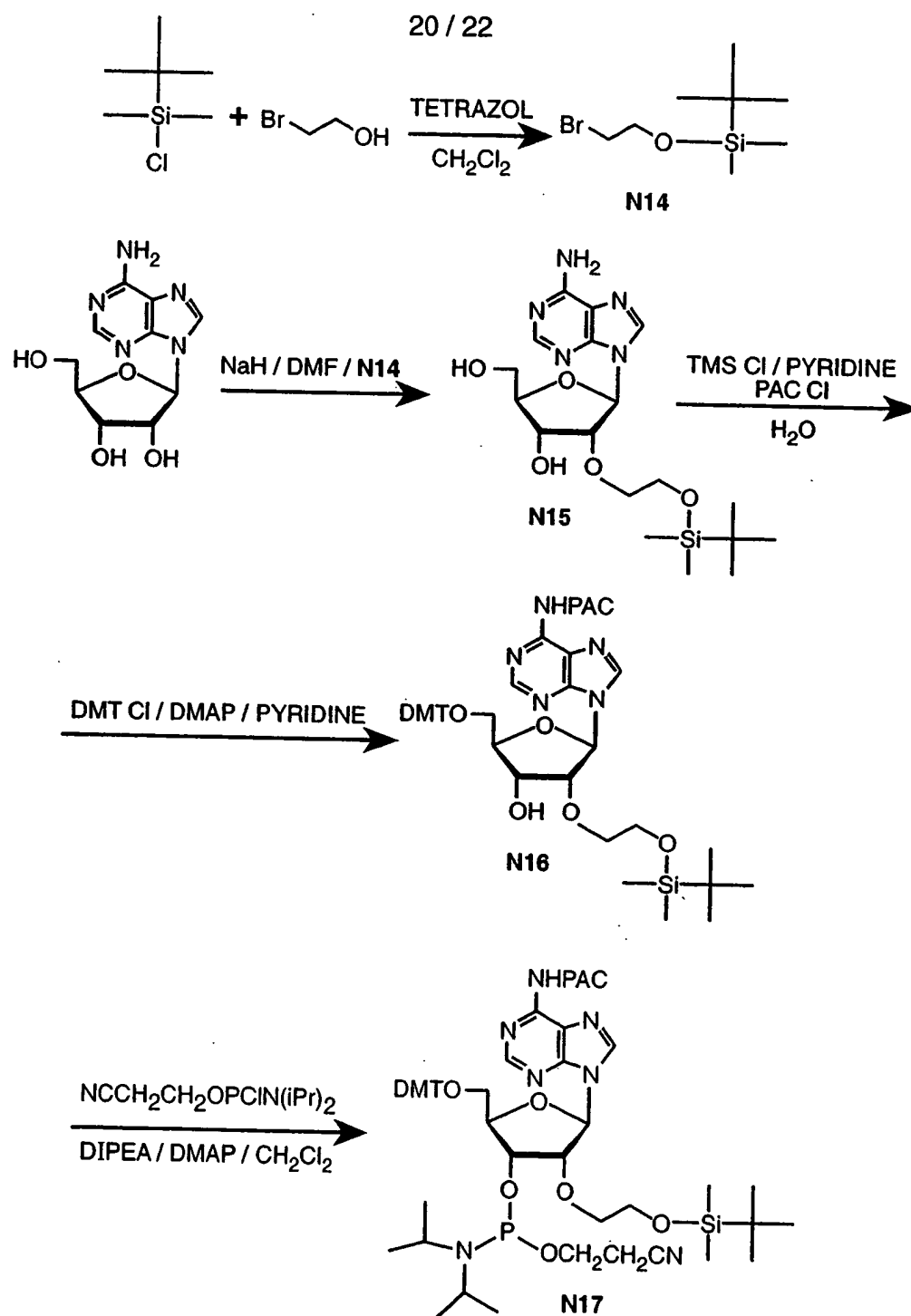


FIG. 9C

+

**FIG._10**

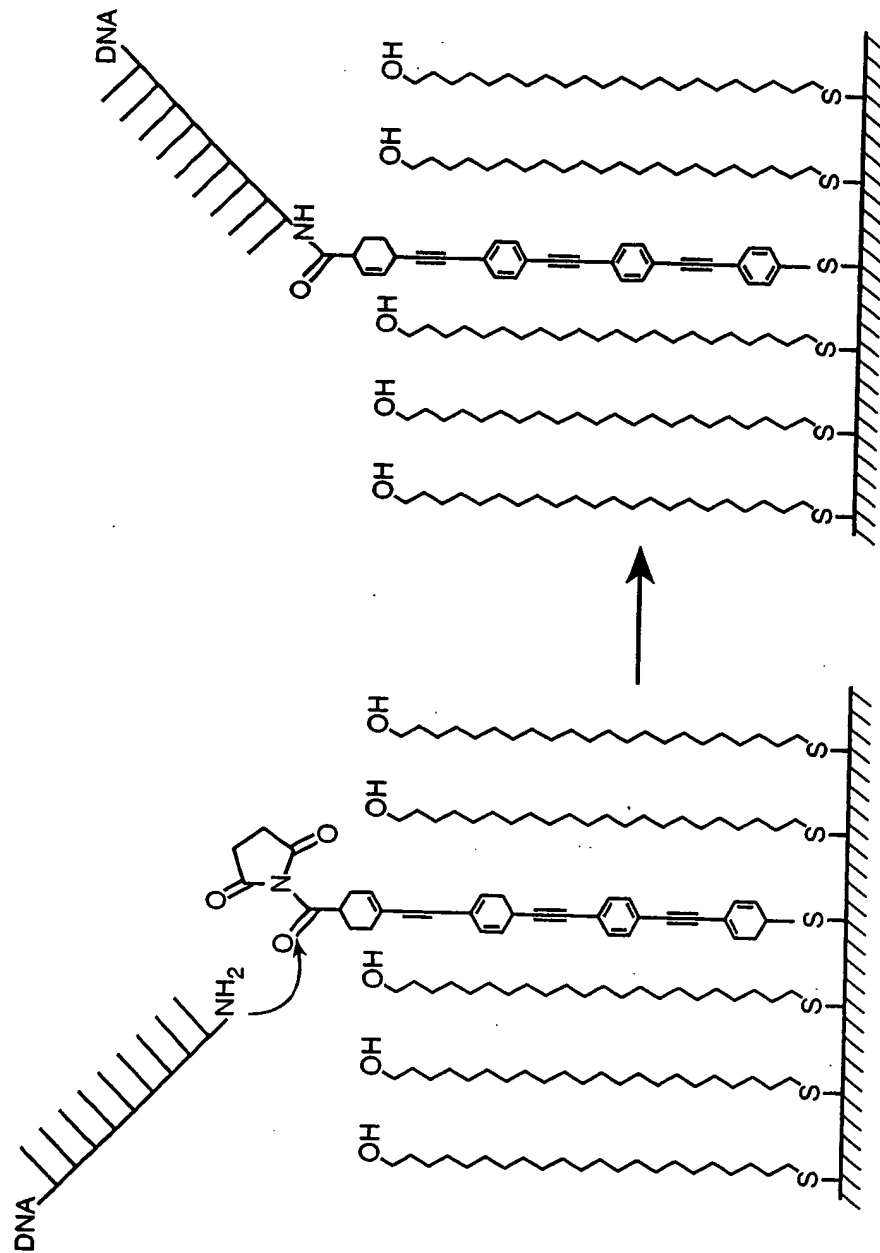


FIG. 11

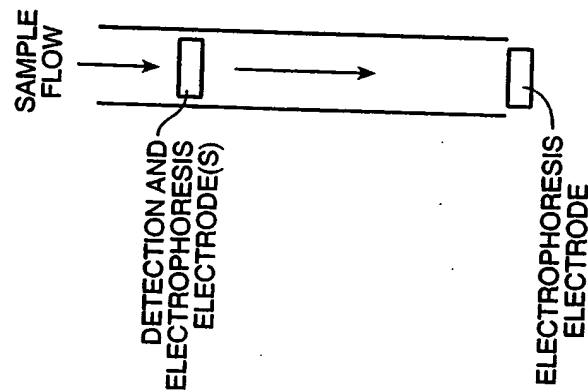


FIG. 13B

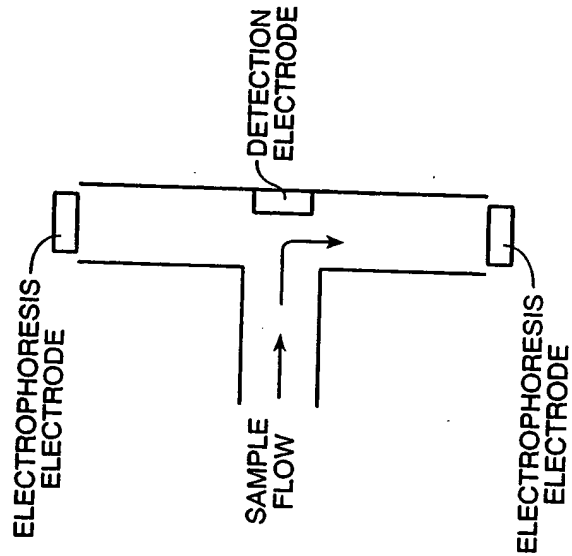


FIG. 13A

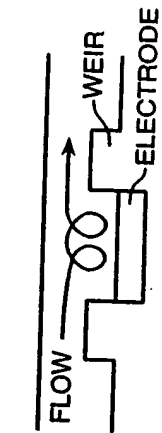


FIG. 13D

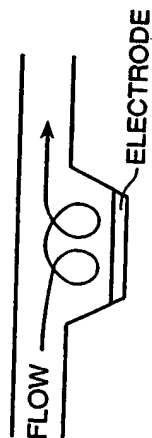


FIG. 13C